

ANIMAL KEEPERS' FORUM



The Journal of the American
Association of Zoo Keepers, Inc.

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Resources for Crisis Management in Zoos & Other Animal Care Facilities, Vol. 2 - Susan D. Chan, Topeka, KS;
William K. Baker, Little Rock Zoo, AR; Diana Guerrero, ArkAnimals, Big Bear Lake, CA

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33rd Anniversary
1974 - 2007

About the Cover.....

This month's cover features the Black-necked Stilt (Himantopus mexicanus) drawn by Debi Talbott, a Keeper at Smithsonian's National Zoological Park in Washington, DC. With a striking contrast between black and white and red legs, it's easy to identify this wadder in the wild. They are found throughout the southern and western United States, south to Peru; including the Great Basin, Sonoran and Chihuahuau of the American Southwest. They can be seen actively feeding in shallow water along shores. They prefer freshwater, but can be seen in brackish lagoons as well. They eat crustaceans, worms, small fish and some seeds. They are tall birds, standing 14-15.5 inches (35.56-39.37cm) and have a wingspan of 25-27 inches (63.5-68.5cm). Both male and female will incubate the 3-5 buff-colored eggs until the precocial young hatch and leave the nest. Their mating season lasts from April through August. Nests are built on the ground near water, and are made of sticks, mud, or shells, or scrapes in the ground, and may be lined with grass, twigs, and shells. Incubation averages 22 to 26 days. Their lifespan is approximately 20 years. Thanks, Debi!

Animal Keepers' Forum publishes original papers and news items of interest to the animal keeping profession. Non-members are welcome to submit articles for consideration. Articles should be typed or hand-printed and double-spaced. Authors are encouraged to submit their manuscripts on a disk as well as in hard copy form. Manuscripts submitted either on disk or electronically as attachments to an email should be submitted in Microsoft WORD. All illustrations, graphs, charts and tables should be clearly marked, in final form and should fit in a page size **no greater than 5.5" x 8.5"** (14cm x 22cm). Literature used should be cited in the text (Brown, 1986) and alphabetically in the final bibliography. Avoid footnotes. Include scientific name (as per ISIS) the first time an animal name is used. Thereafter use common name. Use metric system for weights and measurements (standard equivalents may be noted in parenthesis). Use the continental dating system (day-month-year). Times should be listed as per the 24-hour clock (0800, 1630 hrs. etc.). Glossy black and white or color prints (minimum size 3" x 5" [8cm x 14cm]) are accepted. Clearly marked captions should accompany photos. Please list photo credit on back of photo. Photographs may be submitted electronically as either JPEG or TIFF file attachments.

Articles sent to *Animal Keepers' Forum* will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for *AKE*. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the editor. The editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or email contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone 785-273-9149; FAX (785) 273-1980; email is akfeditor@zk.kscoxmail.com<

Deadline for each regular issue is the 10th of the preceding month.

Dedicated issues may have separate deadline dates and will be noted by the editor.

Articles printed do not necessarily reflect the opinions of the *AKE* staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

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E-Mail Addresses: You may reach Barbara Manspeaker at AAZK Administrative Offices at: aazkoffice@zk.kscoxmail.com< You may reach Susan Chan and *Animal Keepers' Forum* at: akfeditor@zk.kscoxmail.com<

AAZK website Address: www.aazk.org

BFR Website: <http://aazkbfr.org>

Scoops & Scuttlebutt



Wildlife Conservation Grant Available

The Bergen County Zoological Park is now accepting applications for grants to support wildlife conservation in the Americas. Grants of up to \$3,000 are available for all aspects of wildlife conservation, although priority is given to field conservation projects. The deadline for application submission is **30 April 2007**. Selected applications will be notified by 30 June 2007. For an application, contact the zoo at: Bergen County Zoo, 216 Forest Ave., Paramus, NJ 07652; (201) 262-3771 ext. 113; tgunther@co.bergen.nj.us

Keynote Speakers Announced for 2008 Gorilla Workshop

The following have been announced as keynote speakers for the 2008 Gorilla Workshop scheduled for 23-27 January 2008: Thomas Breuer of the Mbeli Bai Gorilla Study (Republic of Congo) and the Max Plank Institute in Germany; Doug Cress from the Pan African Sanctuary Alliance (PASA); and Dr. Alecia Lilly from the Dian Fossey Gorilla Fund International (DFGFI). The conference will be hosted by Disney's Animal Kingdom and The Brevard Zoo in Orlando, FL.

The conference planners have initiated a Call for Papers and round-table discussion topics. Some areas of interest include: 1) *In situ* conservation - unique ways for zoos to raise funds for *in situ* conservation and research; 2) How to connect with a field researcher; 3) Stories from ape sanctuary managers and field researchers on how zoos have assisted and supported their work. *Husbandry* - Philosophy, what's yours?; Unusual husbandry techniques that have enhanced the lives of captive gorillas; Mother-rearing; Managing bachelor groups; and What is the ideal exhibit to more easily house bachelor groups? Deadline for abstracts is 15 October 2007. Abstracts must contain the following: Author's name, affiliation, address, email address and phone number; title of paper; concise description of paper not to exceed 500 words (single-spaced); and, on a separate sheet please include a brief bio or no more than two paragraphs of the author/presenter.

For more information see <http://www.2008gorillaworkshop.com/>

ISBBC Symposium Set for Toronto in Fall 2007

The IV International Symposium on Breeding Birds in Captivity, an international gathering of the world's finest aviculturists, will take place 12-16 September 2007 in Toronto, Ont., Canada. Some of the benefits of attending this symposium include: 1) the opportunity to converse and engage with some of the world leaders in the field of aviculture, zoology, ornithology and avian conservation; 2) the opportunity to further the success and fecundity of established breeding programs for both *in* and *ex-situ* initiatives; and 3) experience one of the most culturally diverse cities and countries in the world, making it a perfect venue for international collaboration and participation.

For further information please visit www.ISBBC.org or call 1-416-910 AVES or 1-416-866-AVES.

Interesting Website Worth a Look

Check out <http://www.aps.uoguelph.ca/~gmason/StereotypicAnimalBehaviour/bookabout.shtml> to see a review and information on the Second Edition of *Stereotypic Animal Behaviour: fundamentals and applications to welfare*.



From the President

The deadline for nominations for candidates to the AAZK Board of Directors is past. Only two qualified candidate applications were received for the three open Board positions available in the 2007 election. Because these candidates would run unchallenged, the current Board has determined that holding an election would be moot.

Therefore, all Professional AAZK members should be aware that there will be no election for 2007. The names of the qualified candidates will be published in *AKF* once they have been notified. AAZK had planned to try out an online voting format for this election, but now will not have the opportunity to see how well it might have worked.

According to the AAZK Bylaws, the sitting Board can complete the election process and fill the vacant position under the following provision: The Bylaws allow a vacant Director position to be filled by appointment of the Board. Following the expiration of terms of the current members who are going off the Board at the end of the 2007 National Conference, the sitting Board (which would now include the two eligible candidates noted above) may then appoint a Professional member of the Board's choosing. According to the Bylaws a Board member may not serve more than two consecutive terms. However, there is no provision for a specific break in service. Therefore, a Board member whose term expires at the end of the 2007 National Conference, may be considered a viable candidate for appointment to the Board at any time in the future, with as little as a 24-hour break in service, between the expiration of elected term and appointment by the sitting Board.

It is unfortunate that there were not more Professional AAZK members interested in serving on the Board of Directors and in helping to chart the future course of this Association.

A handwritten signature in cursive script that reads "Denise C. Wagner".

Denise C. Wagner
President, AAZK, Inc.

Are You Moving?

Make sure to notify AAZK National of your change of address. Don't miss a single *AKF* issue! Call: 785-273-9149 or you can email change of address information to: aazkoffice@zk.kscoxml.com<

Coming Events

Okapi Keeper Workshop 10-12 April 2007 - Hosted by the Dallas Zoo. The first of its kind, this workshop will feature round table discussions on a variety of okapi husbandry topics from operant conditioning to calf rearing. For more information, call 214-670-6833 or visit our website: www.dallaszoo.org/okapi

Amphibian Biology and Management - 14-19 April 2007 - Toledo, OH - provides a solid background in amphibian biology as it relates to husbandry, breeding, conservation and cooperative programs. Topics covered include general biology, classification, diversity, and practical aspects of husbandry, veterinary care, conservation, and visitor education. For more info visit www.aza.org/prodev/; email lat AZATraining@aza.org; or call Geri Noland at 301-562-0777 ext 238.

AZA Central Regional Conference - 25-28 April 2007. Hosted by the Blank Park Zoo in Des Moines, IA. For more information contact Beth Strelitz, AZA's Meeting Manager, at bstrelitz@aza.org

2007 Rhino Keepers Workshop - 7-11 May, 2007 - at Werribee Open Range Zoo, Melbourne Zoo - Australia. For further info contact Brooke Squires; email - rhinoworkshop07@yahoo.com.au; website - www.rhinoworkshop07.com

6th Annual Callitrichid Behavioral Husbandry and Management Workshop - 12-13 May, 2007 - Hosted by the Roger Williams Park Zoo, Providence, RI. This is a free workshop for those working with tamarins and marmosets and will include formal presentations, posters, invited speakers and open discussion covering a variety of topics such as husbandry, training, enrichment and conservation. For more information go to: <http://www.rwpzoo.org/calendar/callitrichid.efm> or email Jhennessy@rwpzoo.org

Australasian Society of Zookeeping (ASZK) Annual Conference - 18-20 May 2007 - Alice Springs, NT, Australia; E-mail: slromer@bigpond.com Web: www.aszk.org.au

31st Annual International Herpetological Symposium 20-23 June 2007 in Toronto, Ont., Canada. Hosted by the Toronto Zoo. All details are online at <http://www.kingsnake.com.ihs>

The Chimpanzee Care and Management Workshop 17-19 July 2007. Hosted by the Knoxville Zoo, Knoxville, TN and presented by the Chimpanzee SSP® A comprehensive three-day course covering all aspects of progressive chimpanzee husbandry. Topics include: managing complex social groups, social introductions, operant conditioning training, contraception strategies, and enrichment programs. For registration or other information contact Steve Ross, Lincoln Park Zoo at (312) 742-7263 or ross@lpzoo.org

MIE: Macropod Information Exchange - 27-29 July 2007. To be held in Kansas City, MO. For more information visit: www.macropodinfo.com <<http://www.macropodinfo.com>> or contact Jacque Blessington at: Jacsprat65@aol.com

International Conference on Environmental Enrichment - 5-10 August 2007. Hosted by Schöenbrunn Zoo, Vienna, Austria. Theme is "Enrichment - key for successful animal management". further info available at the conference website www.zoovienna.at/icee2007

IY International Symposium on Breeding Birds in Captivity - 12-16 September 2007 at Doubletree International Plaza, Toronto, Ont., Canada. For more information please visit <http://www.isbbc.org/>

AZAD National Conference - 25 - 30 September 2007 in St. Louis, MO. Hosted by the Saint Louis Zoo Docents. Conference capacity is 700 people. For information contact Louise Rovak, lrovak@sbcbglobal.net or see <<http://www.stlzoo.org/education/zoodocents/2007azadconference/>

AAZK National Conference - 30 September - 4 October, 2007 - at Moody Gardens in Galveston, TX. Hosted by the Galveston AAZK Chapter. For more info watch the *AKF* or visit the Chapter's website at www.gcaazk.org/ Also see information in yellow insert in this issue of the *Forum*.

BIERZS The Symposium 2007: Bear Information Exchange for Rehabilitators, Zoos and Sanctuaries Location: U.S.A. TBA Dates: Fall 2007 - Information updates will be posted on www.bearkeepers.net

The 4th Crissey Zoological Symposium - 7-8 December 2007. Held at The North Carolina State University College of Veterinary Medicine. This symposium is for professional nutritionists, researchers and veterinarians working with zoo animals; interested students. First day focus will be on reptile and amphibian nutrition; second day will encompass nutrition talks from all comparative nutrition areas. For symposium details see www.cvm.ncsu.edu/conted/zoonutrition/

2008 Gorilla Workshop - 23-27 January 2008 - Hosted by Disney's Animal Kingdom and the Brevard Zoo in Orlando, FL. For more information see 2008GorillaWorkshop.com, or call Beth Armstrong at (614) 506-7368 or Rachel Daneault at (407) 938-2337.

Post Your Coming Events Here
email to: akfeditor@zk.kscoxmail.com

AAZK Offers Four Grant Opportunities

Deadlines for Application Approaching

If you are interested in applying for one of the several grants offered by AAZK, you need to be aware that the deadline for receipt of applications is 1 June 2007 and 1 July 2007 depending on the grant. Below is a listing of the available grants. Forms are available on the AAZK website at www.aazk.org Click on "Grants" on the menu bar on the left on the AAZK homepage.

AAZK offers the following grants:

The Geraldine Meyer/AAZK Professional Travel Grants

A total of \$2,000.00 is available annually. Grants are awarded twice a year, in May and November. Applications, from new and experienced keepers, are evaluated on their merit based on the member's submission of all requested materials. Awards may range from \$1,000.00 to \$250.00 or less depending on need. Applicants are encouraged to solicit additional funds from their institution or other sources. Applicants with other committed funds, or in-kind support (time off) will receive slight priority but all applications are encouraged.

Applications for mid-year consideration are due by February 1 of the calendar year; applications for end of the year consideration are due by July 1 of the calendar year. Money will be available upon notice to the recipient. Winners are required to submit an article to the Forum on the workshop or research they participated in.

Advances in Animal Keeping Course Grant

AAZK awards \$1,000.00 to the winning applicant to attend the new Advances In Animal Keeping Course offered by AAZK and AZA through the AZA professional schools program. Applications are due by July 1 of the year prior to the one in which the applicant wishes to attend this course.

CPR Grants

The Conservation, Preservation, and Restoration Grant awards up to \$1,000.00 once a year for projects oriented toward all conservation, preservation, or restoration of habitats/species with a preference for projects taking place in the U.S. but not limited to this. Applications are due June 1 of the calendar year for funding the following year.

Research Grants

The Research Grant awards up to \$2,000.00 once a year for AAZK member-driven research projects, small or large! Applications are due June 1 of the calendar year for funding the following year.

Information on the AAZK grant program is available on the AAZK website or by contacting the Grants Committee Chair at: shelly.roach@columbuszoo.org or (614) 724-3667.



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In Memoriam

Jennifer Hackshaw

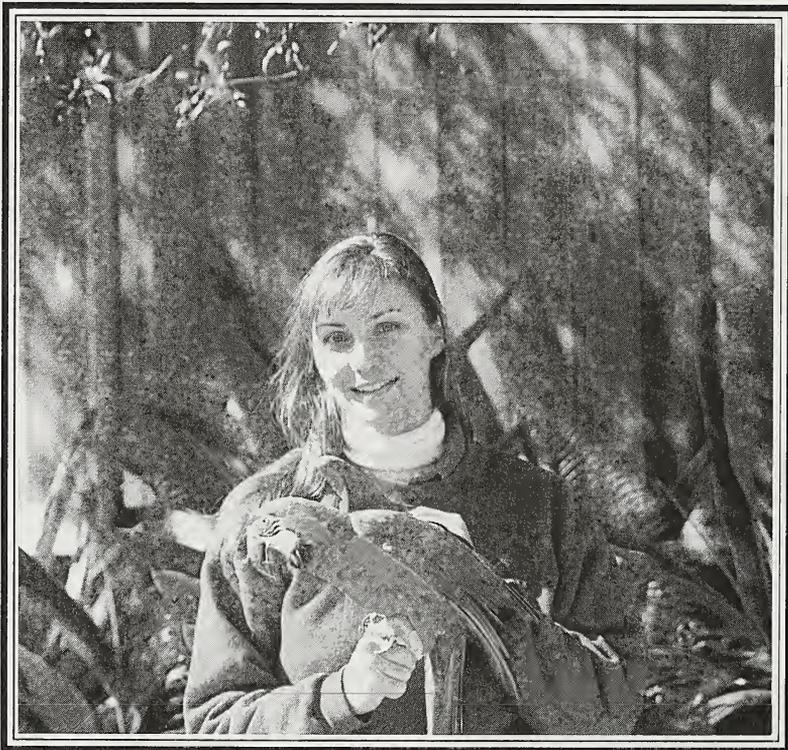
General Curator, Tampa's Lowry Park Zoo

Jennifer Hackshaw passed away on February 9, 2007 after a brave battle against cancer. She is survived by her husband of 16 years, Simon Hackshaw, Senior Graphics Manager at Tampa's Lowry Park Zoo, and two beautiful children. For more than 14 years, Jennifer's endless energy, charisma, and passion for animals played a large role in the development and success of our animal conservation programs and diverse animal collection at Tampa's Lowry Park Zoo. She served on numerous AZA and AAZK committees during her tenure. Most will remember her for her unwavering determination, her keen ability to instill in others her enthusiasm for conservation, and her willingness to listen.

After graduating from the University of South Florida with a B.A. in Psychology, Jennifer began her work at the Zoo in 1992, first as a volunteer, then as an animal keeper for the Zoo's Aviary Department. In 1993, she was promoted to Assistant Curator of Birds, overseeing the Zoo's avian collection. During her time as Assistant Curator, Jennifer served as President of the Suncoast Chapter of the American Association of Zoo Keepers (1995-1996) and received the *Jean M. Hromadka Excellence in Zoo Keeping* award from AAZK in 1996.

Jennifer was promoted to General Curator of Tampa's Lowry Park Zoo in February 1999. She oversaw the entire animal department, managed more than 45 staff members, and supervised more than 300 programs including, animal conservation, education, and research. In addition, Jennifer was responsible for acquiring new animals and assisting with the development and design of the Zoo's animal habitats.

She was a calm guiding influence for the ones who had the privilege to know, love, and work with her. Jennifer Hackshaw was courageous, inspiring, and always full of life. She will be greatly missed, and her beautiful spirit lives on in all of us. *(submitted by Sylvia Hatcher, LPZ, Tampa)*



*Jennifer Hackshaw
May 1970 ~ February 2007*

AAZK Announces New Members

Jennifer A. Hammell, **Cape May County Zoo (NJ)**; **Michelle Medina**, no zoo listed (NY); Anne Donnelly, **Rosamond Gifford Zoo (NY)**; Brenda Fisk, Nancy Martin and Alexander Santa, **New York State Zoo at Thompson Park (NY)**; Laurie Perry, no zoo listed (MD); Melanie Crump, Bryana Libby, Leigh Fernandez, Lauren Augustine and Jennifer Rosado, **The Maryland Zoo in Baltimore (MD)**; Kelly Wright, **North Carolina Zoological Park (NC)**; Maria DeCicco, **Santa Fe Community College Teaching Zoo (FL)**; Julie Liberante and Melissa Dolinsky, **Palm Beach Zoo at Dreher Park (FL)**; Ashleigh Kandrac, **Lion Country Safari (FL)**; Amy Yadron, **Disney's Animal Kingdom (FL)**; Cayle Pearson, **Busch Gardens/Tampa (FL)**; Angela D. Price, **Memphis Zoo (TN)**; Lindsay Cosens, Allison McCabe, Michael Puppan and Kristen Gray, **Detroit Zoo (MI)**; Mary Babcock, no zoo listed (MN); Melissa Sulok and Dan Powell, **Brookfield Zoo (IL)**; Christopher Ferris, **Audubon Zoo (LA)**; Erin McEwin, Colleen Mullikin, Julie Post, Christine James, Seely Wetherell, Charissa Lowe, and Tara Sieverding, **Dallas Zoo (TX)**; Emily Macklin, **International Exotic Feline Sanctuary (TX)**; Karen Holcroft and Heather Green, **The Rainforest & Aquarium at Moody Gardens (TX)**; Carlos Torrez, **San Antonio Zoo (TX)**; Cammy Muirhead, **Cheyenne Mountain Zoo (CO)**; Stephen Lanning, no zoo listed (AZ); Alicia Kemery, **Living Desert Zoo & Gardens (CA)**; Corinne MacDonald, **San Francisco Zoo (CA)**; Gwendolyn Gardner and Amy Brandt, **Woodland Park Zoo (WA)**; Elizabeth Simmons, **Pt. Defiance Zoo & Aquarium (WA)**.

Renewing Contributing Members

Bonnie Jacobs
Lincoln Park Zoo, Chicago, IL

Renewing Institutional Members

The Good Zoo at Oglebay Park
Wheeling, WVA
Joe Greathouse, Curator of Animals

Wildlife World Zoo
Litchfield Park, AZ
Mickey Ollson, Director

Calgary Zoo Library
Calgary, Alberta, Canada
Alex Graham, President & CEO

New Institutional Members

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Jackson, NJ
Mark Kane, President/General Manager

Philadelphia Zoological Gardens
Philadelphia, PA
Vikram H. Dewan, President & CEO

The Perkins Wildlife Center
Cleveland, OH
Harvey B. Webster
Director of Wildlife Resources

Indian River Reptile Zoo
Indian River, Ontario, Canada
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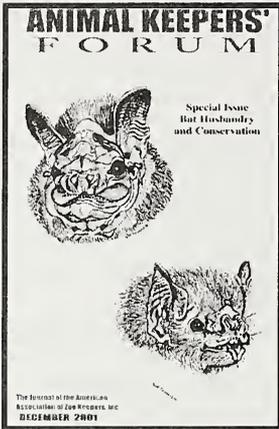
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DEDICATED ISSUES SALE !

We're cleaning house as we are running out of storage space at the Administrative Office. So we are pleased to offer a special twin-pack of dedicated issues that have been published by AAZK, Inc. If you missed these special issues or are a new AAZK member, now is your opportunity to pick up a wealth of information for a minimal price.



The Special Issue on Bat Husbandry and Conservation was published in December of 2001 and contains 18 papers on various aspects of bat husbandry, enrichment and conservation status in the wild. 70 pgs

The Special issue on Cheetahs was published in July/August 2005 and contains 31 articles dealing with a broad range of topics from captive husbandry to hand-rearing to breeding to conservation in the wild and field research. 124 pgs.



Please fill out the order form below to receive this twin-pack of dedicated *AKF's*. Mail the order form, along with check made out to AAZK or credit card information to: Dedicated Issues, AAZK, Inc. 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054. Or you may call (785) 273-9149 to purchase using a Mastercard or Visa.

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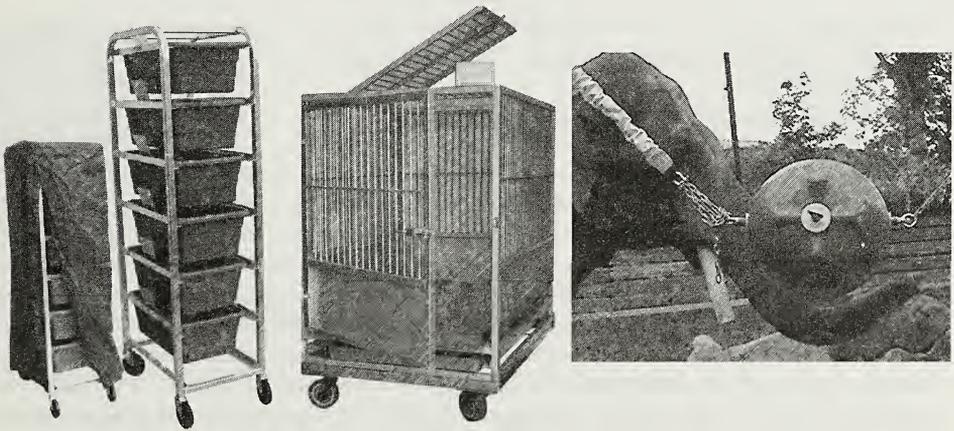
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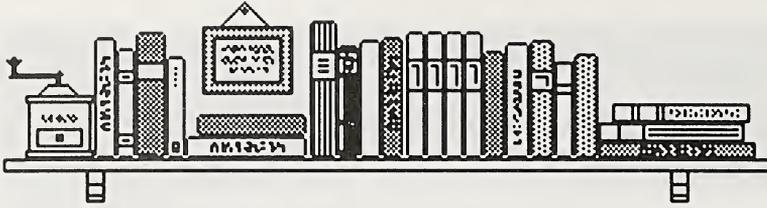
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Book Reviews

The Spotted Turtle: North America's Best

By Al Roach 2006

Living Art Publishing, 836 2nd Street NW, Rochester, MN 55901

ISBN 0-9638130-5-6 <http://www.livingartpublishing.com>

71 pages, 50 color photos, 1 map

\$12.95 + \$2.00 s&h

"The Spotted Turtle: North America's Best," is a new book by naturalist Al Roach. It features much interesting natural history information, including photos of the cranberry bogs and water-filled pools that now are home to many of the remaining populations of this chelonian in New Jersey. The book contains important information for conservation biologists about breeding and reintroduction of this turtle. It also has an excellent chapter on the conservation status of this species in every state in which it occurs. The author is a graduate of Temple University and has spent over 14 years observing and working with Spotted Turtles. *Source: Center for North American Herpetology, Lawrence, KS New Release* <http://www.cnah.org>

Temperature-Dependent Sex Determination in Vertebrates

Edited by Nicole Valenzuela and Valentine Lance 2004

From Smithsonian Books and available through Rowman & Littlefield and Other Online Retailers

ISBN: 1-58834-203-4

Hardcover: 304 pgs; 57 b&w illustrations Price: \$69.95

One of the hottest topics in evolutionary biology and conservation biology for decades, temperature-dependent sex determination (TSD) was discovered in the 1960's, yet no book has ever before been devoted entirely to the subject. Edited and authored by many of the world's foremost authorities on the subject, this is a comprehensive work that compiles, analyzes and integrates existing information about this field. The volume encompasses a series of reviews of what is known about ecological, physiological, molecular, and evolutionary aspects of TSD, bringing together for the first time the diversity of issues related to this sex-determining mechanism and synthesizing the vast amount of literature from multiple disciplines. The book includes new data not published elsewhere and is organized in four thematic sections: Prevalence of TSD in vertebrates; Thermal effects, ecology and interactions; Evolutionary considerations; and a Conclusions chapter.

Contents

Introduction (N. Valenzuela)

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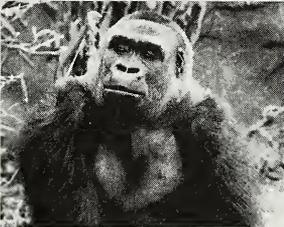
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Source: Center for North American Herpetology, Lawrence, KS New Release <http://www.cnah.org>



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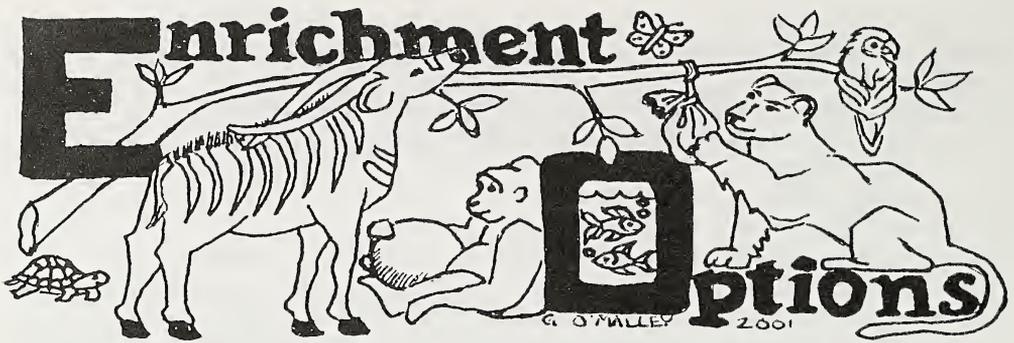
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*EO Editors - Dawn Neptune, Utah's Hogle Zoo
and Rachel Daneault, Disney's Animal Kingdom*

Something Revamped at the Indianapolis Zoo..... a BEC!

*By Tammy Root, Chair of BEC
Indianapolis Zoo, Indianapolis, IN*

At the Indianapolis Zoo, the collections staff had a good enrichment/training program established in most areas, but we wanted to make the program more uniform throughout the Zoo. To accomplish this task, we formed a new Behavioral Enrichment Committee (BEC). (The Indianapolis Zoo had a BEC many years ago, but as staff changed, so did the commitment to have a BEC). We selected an employee from each of the biome-related areas (Waters, Plains, Forests, Deserts and Encounters) to form the committee, along with a curator and a vice president.

As a committee, we reviewed all the programs and we discovered that each area was on a different level in their training/enrichment program. Programs ranged from having just started and very basic to having been in place for several years and more advanced. Next, we developed a packet to be distributed to each area that included definitions, goals, terminology and forms.

Two of the committee's goals were to collaborate on ideas and distribute information on a zoo-wide basis. As professionals we are always looking for ways to improve our jobs and use our resources to the best of our ability. But we sometimes get so wrapped up in working with our immediate colleagues on our own enrichment/training methods that we forget to talk to the other staff members about what they're doing with their animals. We realized that we needed to collaborate on enrichment documentation and get the entire Zoo thinking about enrichment as a concept that applies to whole Zoo.

After setting several goals for the BEC, we developed our mission statement:

"The Indianapolis Zoo's Behavioral Enrichment Committee hopes to streamline and standardize the animal enrichment programs practiced throughout the Zoo and to enhance methods to educate the staff and public about the enrichment practiced here at the Indianapolis Zoo."

The BEC also has been busy in updating our Behavioral Enrichment Request Form, allowing the form to be processed via one of two routes – food item requests include the nutritionist, while play items do not. We also updated our Enrichment Evaluation Form and our definition of enrichment, which includes categories for training, sensory, and feeding.

Over the past two years, the BEC has received approval on the packet to be distributed to all collections staff, has hosted several training/enrichment workshops zoo-wide, has invited all staff to watch training/

enrichment sessions in each area (this was one time that I was able to see how sidewalk chalk was used for rhino enrichment and was then able to use it for penguin enrichment), has brought guest speakers into the Zoo, and has increased training/enrichment knowledge throughout the Zoo, including non-collections staff and visitors.

This committee has proven to be a success and a positive development for the staff. Our goal is to continue to make improvements in our program and expand the shared knowledge that is making us more productive and effective in our daily work.

Leather Elves Enrichment Device Contest

Attention all AAZK members, it's time to put your thinking caps on. The AAZK Enrichment Committee and The Leather Elves are happy to be sponsoring the 6th Annual Enrichment Device Design Contest.



If you've got an idea for a device that's just taking up space in your brain, or if you have built something that has worked particularly well with your animals, share it with the world. Entries will be judged on safety, innovation and affordability. Keep in mind The Leather Elves do not weld, and they do not use materials such as sheet metal. The winning device will be named after you, built by The Leather Elves and a portion of the proceeds for each sale will go to AAZK. Please send a written description and a diagram or drawing of your idea (don't worry- you do not need to be a professional artist!!) to: Robin Shewokis/The Leather Elves, 43 Mutton Lane, Weymouth, MA 02189.

Entries must be received **by 30 April 2007**. The winning design will be announced at the AAZK National Conference in Galveston, TX and highlighted in a subsequent issue of the *AKF*.

Lee Houts Enrichment Excellence Award - Let Someone Shine!

Have you been impressed with an initiative that an individual or group has developed to better enrich their animals? Has an individual or group you know, developed an activity for a species in their care that has brought forth breathtaking natural behavior? Do you know an individual or group that has spearheaded a dynamic program helping their department move forward with sustainable, accountable, zoo-wide enrichment? Has this individual or group inspired you through their dedication to enrichment for captive wildlife? If so, you can let them and their colleagues know just how much their hard work is appreciated through the Lee Houts Enrichment Excellence Award. Official forms for nomination may be found on the AAZK website (www.aazk.org) under Awards Committee., but start thinking now of that special person or group who you think may be an Enrichment Hero! Award recipients and their work will be highlighted in an issue of the *AKF*.

(Ideas appearing in this column have not necessarily been tested by the editors for safety considerations. Always think ahead and use good judgement when trying new ideas. You are invited to submit material for the Enrichment Options Column. Look in the January 2004 issue of AKF for guidelines for articles acceptable for this column's format or contact the editor at akfeditor@zk.kscoxmail.com for a copy of the guidelines. Drawings and photos of enrichment are encouraged. Send to: AKF/Enrichment, 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054, USA. Eds.)

Call for Submissions for Enrichment Options Column

Enrichment Options readers - WE NEED YOU!! We are looking for any and all articles that discuss enrichment processes and philosophies as well as device articles. We are, however, looking for device articles to discuss not only the construction of the device but also the goals, behaviors to be encouraged, process of documentation and findings upon evaluation. We also want to know about the programs, processes and philosophies at your institution and how they work for you.

But here comes the critical piece to this equation. We need you, our readers, because you are our most important contributors. We need you to submit articles for publication because the column simply cannot exist without you. We want to share information with institutions all over the world, but we can't do it without your submissions. We want to hear about how the enrichment process works for your facility. We want to know about specific enrichment devices that are working for your animals. We want to hear your creative perspectives on all things enrichment!

Submissions may be sent in hard copy (also include a disk or CD) to: Enrichment Options, AAZK, Inc., 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054. Or you may submit material electronically to akfeditor@zk.kscoxmail.com. Please send photos, graphs or charts as separate jpg or tif files. Make sure to provide captions and photo credits. Manuscripts should be sent in MS Word format only. Please provide your contact information, including email and daytime phone number.

In a Spicy Hot Texas Nutshell: The ZACC 2007 Conference Report

*By Yuri Mitzkewich, Keeper
Miami Metrozoo, Miami, FL*

The following is a summary on this year's Zoos and Aquariums Committing to Conservation conference, hosted by Houston Zoo, and Houston's AAZK Chapter. I will mainly just be telling you about my favorite parts (the ones for which I was present).

(Before beginning I'd like to thank Randy Tucker who, even though I'm always forgetting to tuck in my shirt, helped me get conference registration funding from South Florida AAZK Chapter..... as well as Kreso Golenja, without whose rental car we'd have been five days waiting for Houston transit buses in the 45° rain).

Now, for anyone who has never been to one, ZACC conferences are basically conservation networking & brainstorming workshops, with attendees being everyone from field researchers to conservation NGO representatives, from zoo directors to zoo keepers, from North American environmentalists to African conservationists. All the presentations are very informative, but better than that, you get to meet a bunch of very bright, creative people...many of whom are doing important work trying to preserve the world's most endangered species and habitats.

Some highlights were: Beth Armstrong's talks (How to Build a Conservation Reputation: Perspectives from a Small Florida Zoo, and her contributions to A Task Force Approach: How to be a Conservation Organization). To anyone who doesn't know her, Beth was originally from Columbus Zoo, and she is now the Field Conservation Coordinator at the Brevard Zoo (she also happens to be one of the founders of ZACC). She had literally a ton of fundraising tips and suggestions. She also made a strong point of how much an impact small donations can make, that even just \$100 in the U.S can mean the equivalent of \$1000 in many developing countries. A good idea too was how she illustrated that building relationships with people in the field can be really useful in enhancing a zoo's educational abilities. Zoos should be encouraged to request that people who receive donations also report on their work, contribute articles and photos for zoo publications (and even doing onsite presentations if and when possible).

In a similar way Wally Van Sickle's talk (IDEA WILD: How Small Grants Benefit Big Conservation Efforts) was also extremely good. Wally's organization has been assisting field researchers and conservationists with small (less than \$1,500) donations since 1991. The money goes mostly to buying basic equipment (binoculars, laptops, GPS, camera traps, etc.) and educational materials like books and computers. He stressed how this type of assistance can have an impact beyond the initial help, considering much of the equipment may be used on an average of two additional projects, and how empowering it can be for beginning projects to receive a little help when they otherwise wouldn't have gotten it. (For a better look at what this amazing organization does go to: IDEAWILD.ORG).

One talk that was more applicable was Amanda Daly's talk (Pongos Helping Pongos: Turning Animal Artwork into Conservation Cash) about how a group of keepers started a non-profit organization within the zoo to raise money for conservation. The keepers she worked with were able to organize events where animal paintings could be auctioned off. They were even able to get help from local businesses (coffee shops and book shops mainly), who would sell the artwork in their own stores(!). Like Beth, Amanda also had a whole lot of useful tips and suggestions to share. One really good one was how, with only investing a little money towards product development (turning paintings into greeting cards, t-shirts, etc), they were able to raise much more on the items than they might have otherwise.

Also very memorable was Wilton Nsimango's talk (Painted Dog Conservation Project). He works with that project in Zimbabwe along with Gregory Rasmussen, who attended the ZACC 2005 conference in Brevard Zoo. (At that time Gregory was still recovering from his solo plane crash in Zimbabwe, which left him with two broken legs, alone in the desert for over two days). He'd had to fend off lions and hyenas through that ordeal, only surviving to tell about it by making loud metallic sounds on the plane's destroyed hull, and by crawling up inside a wing once he was too tired to keep doing that. Wilton gave a great presentation, detailing the local education projects they do with children from the nearby villages, introducing them up close to the painted dogs that live in their sanctuary. (His presentation was immensely entertaining as well, with him memorably exclaiming 'oh my Godt!' every time he accidentally brought up the menu while doing his Power-Point.®)

Other highlights included: (of course) Zoo Day, when we were treated to (actually) tasty organic meals, provided by conference sponsor Whole Foods®, as well as being let loose all day inside the Houston Zoo. Interesting also were the talks on the current amphibian global crisis, chinchilla conservation on a shoe-string, and one on the Asian 'hairy nosed' otter field study.

The one thing I will never forget, however, was that night at the Houston Zoo (enjoying the food as well as the open bar), Wilton and I founded something called the 'Spoon Club'. It was brought about when I discovered that my reflection was upside-down in our fancy fake silverware while reflecting correctly on the opposite side (a basic law of refraction). When I shared the discovery with Wilton he excitedly yelled "Whoa..! It is Madgic!!!", and then insisted on sharing the experience with everyone else at our table. At the end of the evening, the whole group then kindly donated all their spoons to Wilton, so that he could then take them back to Zimbabwe to share them with all the local village children. And so (also with help from Defenders of Wildlife's Eva Sargent) the new project "Spoons for Zimbabwe" was born!

Thanks go out to the Houston Zoo and the Greater Houston AAZK Chapter for putting on a great conference that provided lots of information, great networking opportunities and lots of fun!

(Editor's note: for more information about Zoo and Aquariums Committing to Conservation, see <http://www.houstonzoo.org/ZACC>)

The Breeding Of The Green-naped Lorikeet (*Trichoglossus haematodus haematodus*) in a Multi-species Exhibit at the Oregon Zoo

By

Rick Yazzolino, Shawn St. Michael, and Charlie Rutkowski, Avian Staff
Oregon Zoo, Portland, OR

The Oregon Zoo lorikeet exhibit houses 84 lories of 10 different species. This multi-species flock environment presented a number of problems which needed to be overcome before a successful breeding program could be developed. We believe that many of the techniques used here can be incorporated into other programs and for other species to help improve breeding success.

The lorikeet exhibit opened in 1999. It has an outside walk-through aviary and an indoor holding area that is off-exhibit. The L-shaped aviary measures 75 feet and 50 feet on the sides (22.9m x 15.2m) and is framed by 20-foot-tall (6.09m) fiberglass posts, draped with wire mesh to form the walls and roof. A covered walk way contains infrared heaters to provide supplement heat in inclement weather. There is a pool to provide bathing opportunities. The indoor area has a large 16 x 8 x 9 foot



The covered walkway at the lory exhibit.

(photo by Charlie Rutkowski)

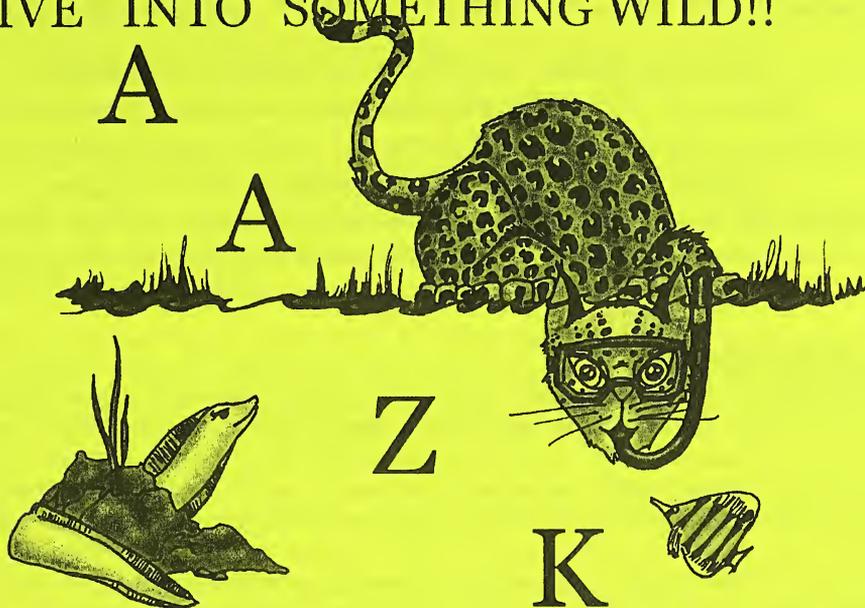
(~4.8m x 2.4m x 2.7m) flight and two smaller holding cages. Each holding area can be connected by opening a small hatchway between them.

The feeding regime was to feed Cuttlefish Nectar[®] (1/4cup powder to six cups water) in the AM and PM, with fruit put out during the middle of the day. They have "Bird of Paradise" pellets *ad lib*. The general public is allowed to feed the birds small cups of apple juice. The feeding of fruit on exhibit proved problematic.

The birds leave many little pieces of fruit as they eat. This attracted rats. To reduce the vector problem all feeding except the public feeding was moved inside.

In 2000 nest boxes were placed on exhibit. The boxes are 10 x 9 x 10 inches (25.4cm x 22.9cm x 25.4cm) with a 2-inch (5cm) diameter opening. The floor of the nest box was covered with fine wood chips. The birds took to them and nestlings were produced. Several problems occurred. The parents became aggressive as their nest boxes were checked on a regular basis. When the nestlings fledged they were mobbed by some of the more aggressive birds resulting in the death of some fledglings. This resulted in one particular bird being removed from the flock to help the fledglings survive. Another problem was the mobbing of the fledgling by other birds whenever they food called.

DIVE INTO SOMETHING WILD!!



Tentative Schedule

Sunday, 30 September: Icebreaker aboard the Colonel Paddlewheeler. Boarding will be from 7-8pm and we will be paddling around the bayou from 8-10pm.

Monday, 1 October: Papers 9am-6pm, workshops 7-10pm.

Tuesday, 2 October: Papers 9am-3pm, Zoo Olympics 3-6pm, Palm Beach Dinner 7-11pm.

Wednesday, 3 October: Papers 9am-12pm, Zoo Day 12-5pm, Silent Auction 7-10pm

Thursday, 4 October: Papers 9-11am, Business Meeting and Awards Luncheon noon - 3pm, Workshops 3-5pm, Banquet 6-10pm

We are having a themed banquet - *Splash into the 80's* - so look for more information on our website!

There are two "extra" workshops being developed that would take place in conjunction with the AAZK Conference. A one-day Elephant Workshop and a two-day Oiled Wildlife Response Workshop. Details are still being finalized on price and capacity, so stay tuned for more information!

Do you have your Kinkajou footprint yet?

We have animal artwork merchandise available for purchase. All proceeds will help fund the 2007 Conference. Penguin or kinkajou footprints are available on travel mugs (\$20), tote bags (\$15), note cards (\$10), and luggage tags (\$5). More information at www.gcaazk.org in the "Want to help?" conference section.

2007 AAZK National Conference

30 September - 4 October (Sunday - Thursday)

Galveston, TX at Moody Gardens (www.moodygardens.com)

Hosted by the Galveston Chapter of AAZK and Moody Gardens

Email: conference@gcaazk.org Website: www.gcaazk.org

Phone: 800/582-4673 X4105 (This will reach our department secretary, Cheri, who can answer basic questions or direct your call to the appropriate chairperson)

Address: GCAAZK, 3220 Dominique, Galveston, TX 77554

Chapter Challenge

Everything's bigger in Texas! We're proud of our motto and want to extend it to ya'll by enhancing the Chapter Challenge that Cleveland AAZK started in 2003. For a \$300 donation, Chapters will be entered into a drawing for a complimentary conference registration and hotel room for the entire conference. And for just \$500, Chapters will be entered into the first drawing and a 2nd drawing for a complimentary conference registration.

As always, if your Chapter cannot afford to enter either challenge but still wants to donate, send us what you can and we'll be sure to put it to good use and recognize your Chapter as well. We will also accept donations over \$500, just let us know if you want it to sponsor something specific, such as a hospitality night or break. Make checks payable to "GCAAZK" and mail to: Chapter Challenge, 3220 Dominique, Galveston, TX 77554. **The deadline to enter both challenges is 1 July.**

Abstract Info

Deadline for abstract submission (papers, posters, workshops) is 1 August 2007

All abstracts are to be submitted via the abstract submission form on our website. Electronic submission is preferred (conference@gcaazk.org) but the form can also be downloaded and mailed to GCAAZK, 3220 Dominique, Galveston, TX 77554. The form has both addresses listed. Presenters will be notified by 1 September.

Conference theme is "*Dive into something WILD!*" This is a field where we dive in head first and sometimes have to swim against the current. What have you done to lead the school, avoid "predators", or find new ways to migrate through the waters? Papers regarding leadership, innovation, and program development are encouraged. We especially want to hear from those of you who work with animals from down under – water that is. Share your knowledge of husbandry, training, enrichment, conservation, and any other pertinent topic regarding the animals of the lands and waters we strive to protect. Come and explore ideas as deep and diverse as the oceans themselves!

Hotel Info

Deadline for registration is 9 September.

The host hotel is on Moody Gardens' property. The room rate is \$135.00 per night. To receive this rate mention "Group ID" as 7749 and "Password" as 4305. Reservations are preferred online at www.moodygardenshotel.com but can also be made by calling 1-888-388-8484. The address is Moody Gardens Hotel, 4 Hope Blvd, Galveston, TX 77554.

Airline & Airport Info

Our host airline is Continental, which is offering a 2-15% discount, depending on which fare you use. Mention code ZVD6 to receive your discount. If you book online at www.continental.com you will also receive an extra 3% discount!

Houston Hobby (HOU) is the closest airport and is a HUB for Southwest Airlines. It is ~45 minutes from Moody Gardens. Airport information can be found at www.fly2houston.com/hobbyHome. Bush Intercontinental (IAH) is the larger airport and is a HUB for Continental Airlines. It is ~80 minutes from Moody Gardens. Airport information can be found at www.fly2houston.com/iahHome.

Galveston Limousine runs a shuttle from both airports to the hotel. Reservations are recommended by phone or website. Mention you are with the AAZK conference to receive a \$5 round-trip discount. Please let them know your destination is the Moody Gardens Hotel. www.galvestonlimousineservice.com 1-800-640.4826

If you'd rather rent a car & drive to the island, our host car rental company is Avis. The discount is variable (from 5-20%) depending on the vehicle and length of rental. Please mention the conference discount number J868962 when making your reservation. Online reservations are preferred at www.avis.com but can also be made by calling 1-800-331-1600. Avis is offering this discount from 23 September-11 October. There is free parking at Moody Gardens!

Pre/Post Trip Info

PRE-Conference TRIP: Aboard the cruise ship Carnival Conquest! She departs from Galveston 23 September and returns on 30 September just in time for the Icebreaker. Itinerary includes Montego Bay, Jamaica; Georgetown, Grand Cayman; and Cozumel, Mexico. Prices start at \$499 for an inside cabin, \$569 for an ocean view cabin, and \$719 for a balcony cabin. Visit Carnival (www.carnival.com) for more details. If you are interested, please email us by **1 June** at conference@gcaazk.org so we can put together a group for Carnival. With every 8 cabins booked, we get a credit of \$290, which can be deducted from each persons total. **Deadline for registration and payment is 1 June.** A passport is required for travel.

POST-Conference TRIP: To the Houston Zoo and Landry's Downtown Aquarium on Friday, 5 October. Free admission to each facility, behind-the-scenes tours, and hors d'oeuvres will be provided. Price for this trip is unavailable at this time, but will be announced on the conference website and in *AKF* as soon as it becomes available.

Guess Who's 40?

Happy Birthday, AAZK! Did you know AAZK's 40th birthday is this year? Help us celebrate the growth and future of this fabulous organization at this year's conference. We'd like to prepare a slide show of the past 40 years for the conference and need your help. Send us your photos of conferences, keepers, or other great zoo keeping moments. Who's the long-time member of AAZK at your facility? Know any animals that have been around since AAZK's inception? How has your AAZK Chapter grown? We want to know! Email them to conference@gcaazk.org or send them to GCAAZK, 3220 Dominique, Galveston, TX 77551. Please include at which conference or facility the photos were taken.



2007 AAZK National Conference
Moody Gardens, Galveston, TX
30 September - 4 October

DIVE INTO SOMETHING WILD!!



Conference Registration Form

(Please type or print clearly)

Name: _____ Phone: (____) _____

Address: _____

City: _____ State/Prov.: _____ Zip/PostalCode: _____

Institution: _____

Position/Title: _____

Email address: _____

Presenting a Paper/Poster/Wokshop? (please circle) Vegetarian? Yes No

Bringing an Auction item? Yes No (auction items may be sent to GCAAZK, c/o Paula Kolvig, 3220 Dominique, Galveston, TX 77554; OR brought to the conference)

*****Deadline for registration is 30 August. A late fee of \$25 will be applied***
to all registrations from 1 September to 4 October.**

The registration form (on the website - www.gcaazk.org) can either be downloaded and mailed to us (must be postmarked by 31 August to avoid the late fee) or sent as an attachment with an email. Payments can be made by check (payable to GCAAZK) and mailed to: GCAAZK, 3220 Dominique, Galveston, TX 77554 or paid via PayPal if registering online.

Registration Fees:

AAZK Member	\$175.00 US	_____
AAZK Spouse	\$175.00 US	_____
Non-Member	\$225.00 US	_____

Daily Rates:

Icebreaker (30 Sept) aboard the Colonel Paddlewheeler	\$ 40.00	_____
Monday (1 Oct)	\$ 25.00	_____
Tuesday (2 Oct)	\$ 40.00	_____
Wednesday (3 Oct)	\$ 40.00	_____
Thursday (4 Oct)	\$ 45.00	_____
Banquet (4 Oct)	\$ 55.00	_____

Total Fee Enclosed \$ _____

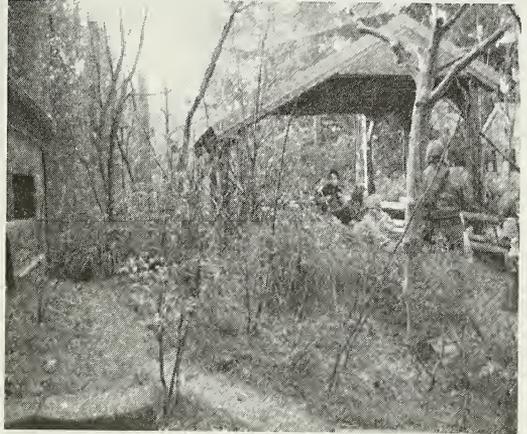
Each conference registrant will receive one free t-shirt. Shirts available in long or short sleeve. Please circle your size and style preference. S M L Xlg XXlg XXXlg short sleeve or long Extra shirts will be available to purchase at \$10 for short sleeve and \$15 for long sleeve.

- Fees include a \$60 contribution to AAZK, Inc. Fee does not include Conference Proceedings

Several steps were taken to resolve these problems. The first was to train the birds to come into the holding area. Initial training was done by blowing a whistle, then feeding the birds their nectar. The birds were given a few minutes to come in after which the door to the holding area was closed. The birds learn quickly to come inside. In fact, after a short time the whistle was abandoned as the birds cued into the sound of the blender. This allowed us the opportunity to check and monitor all nest boxes. There are two caveats. The first is that if a bird did not come in and there were nestlings in boxes, the birds would only be shut in for a few minutes. This reduces the amount of time for birds not in to get up their courage and go into these nest boxes. The second is when new birds are put out on exhibit. The door is left open and nectar placed on the ledge. This gives the birds an opportunity to find the nectar and the way back in.

Now that we can check the nest boxes we know exactly when the eggs were laid, when they hatched and when the birds are about to fledge. We can also monitor problems such as over-grooming. (If the adults break the blood feathers while over-grooming youngster, the nestling will have a more difficult time fledging.)

The next hurdle to overcome was developing protocols for hand-rearing the birds. The chicks are raised by their parents up to about day 50 or just prior to them fledging. They are brought inside and placed in a brooder.



The doorway into the holding area.

(photo by Charlie Rutkowski)



This is a Brinsea® TLC 4 brooder set at 28°C (82.4°F). *(photo by Charlie Rutkowski)*

Chicks have to be taught how to self-feed as soon as possible. Chicks receive nourishment from their parents by holding their head up. We have to teach them to eat with their head down. This is done by holding a syringe above the chick's head dribbling nectar down initiating the gobble response. The syringe is then moved down towards the bowl of nectar. Using the method of successive approximation, the bird quickly learns to feed itself.

Teaching the chick to self-feed is done by starting to feed with a syringe and working towards the chick eating from the bowl. Nudging the chick's head towards the nectar in the bowl until it learns to eat may also do it.

The chicks will eat much better if the nectar is about 32.2°C (90°F). Also, the nectar should not be allowed to sit more than three hours as it begins to deteriorate after that. Removing the nectar after that amount of time will also help prevent sour crop. If the chick is pulled before the 50th day, "Exact"[®] is added to the nectar. If given to older chicks the "Exact" has a tendency to cause loose stools when given in small amounts, and to bind them up if fed exclusively.

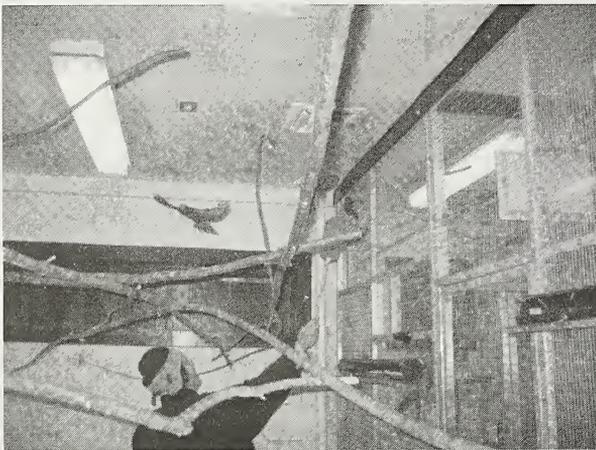
The chicks are introduced to fruit by first blending the fruit into the nectar. Then fruit is placed into the flight for them to eat. They are also provided with "Bird of Paradise"[®] pellets. Fresh water is also provided.

At about Day 42 the chicks are moved to one of the indoor flights. Here they have an opportunity to learn to climb on the wire mesh as well on the branches. They also get to bond with other chicks that are not their nest mates. The chicks also can start learning to fly. To strengthen the breast muscles further, the chicks are flight-trained. This is done by getting all the other birds to go out of the indoor flight and closing the door. The chicks are placed on the floor in that flight and are encouraged to fly. Placing them on the floor ensures that the birds are strong enough to take flight. This eliminates the possibility of injury that may occur if encouraged from a perch or just tossed into the air. Eventually they are encouraged to fly around the indoor flight with a feather duster. Once the birds are strong fliers they are introduced into the flock. We do have observers to ensure the birds get along well. In a number of instances we have seen the parent birds go back to feeding the fledgling.



Lorikeet chick being taught to self-feed

(photo by Charlie Rutkowski)



Flight Training for the Lorikeets *(photo by Charlie Rutkowski)*

In conclusion, the steps above have allowed the Oregon Zoo to go from a 30-40% success rate in raising hatchlings to a 90-100% rate the last three years. We believe that the ability to monitor eggs and chicks, converting the chicks to self-feeding, and most importantly giving them flight training to allow them to escape the bullies of the flock have greatly contributed to our success. We believe these steps can be done at other facilities where birds have to be in a flock situation and can be done with other species.

REACTIONS

A Question and Answer Forum for the Zoo Professional on Crisis Management

By William K. Baker, Jr., Curator
Panthera Research, Maumelle, AR



Question

What types of measures are available for preventing the spread of zoonotic diseases?

Comments

There are numerous ways to prevent the spread of zoonotic diseases. Let's take answering this question in a series of steps. The first step in this process is basic animal husbandry. While cleaning protocols do vary among zoological institutions, accepted procedures traditionally include walking a naturalistic exhibit and removal of fecal material, waste products, and enrichment items. Water features that do not incorporate filtration systems should be drained and sanitized on a weekly basis or as needed.

Night house operations and exhibits that utilize hard surface floors in the keeper work areas, shift corridors, individual holding units, and enrichment items require the daily removal of fecal material, cleaning and sanitizing with a detergent and disinfecting agent. Disinfecting footbaths are highly recommended at exhibit and night house entry points. Steam cleaning of hard surface areas is also recommended on an annual basis.

Historically, a cleaning agent typically will act as a water-soluble surfactant and abrasive agent (detergent), while the disinfecting agent actually kills bacteria and viruses. [A-33[®], HDQ Neutral[®], Roccal[®], RTU[®], or sodium hypochlorate (bleach)] which should always be rinsed away with a high-pressure water stream. Also, animal access should not be permitted until wet areas have dried to prevent injury. Some of the less common brands I have heard of in use would be Wonderclean (a Castrol product), Enjo, Trigene, and Virkon[®]. Typically I prefer to use high-pressure water on a daily basis and bleach on a weekly basis and then use Roccal[®] or RTU[®] on an as needed basis.

Of the disinfecting products on the market I really like Complete RTU[®]. I've used it in situations where bleach may not be appropriate. It comes in non-aerosol spray bottles, which produces a fine foam on horizontal and vertical surfaces, in other words, it doesn't run! Easy clean up with a pleasant mint odor. I have used it mainly in the past in commissary, quarantine, and veterinary areas, basically about 10% of the facility cleaning needs. As a result, we would go through about (1) case a year.

(Complete RTU[®] Particulars: Disinfectant, deodorizer, mildew stat, virucide. USDA authorized for federally-inspected meat and poultry plants. Tested, evaluated, and found effective in 5% serum against HIV-1, influenza, A/Brazil, Herpes Simplex Type 1/Type 2, Vaccina, Pseudomonas, Salmonella, Staphylococcus, and e. coli. Making it a particularly effective cleaning agent for my purposes in the past.)

Another important point is the maintenance of footbaths located at the entry points to exhibits, night houses, and quarantine areas. These are remarkably easy to set up, but require daily maintenance by the attending animal staff to insure that they are kept updated with fresh chemicals. It is also important to remember when using quaternary chemicals that it is really unnecessary to use more than a cap-

full to a couple of quarts of water for sanitizing. Any more, and you're unnecessarily wasting chemicals.

Another option that I have seen in use over footbaths were spray cans of Lysol® that were placed in a PVC pipe just inside of night house doors. Staff members would step inside the double doors, retrieve the can and spray the soles of their shoes and proceed into the building. However, it is important to remember that phenol-based products are not suitable around certain species, especially felids. The best option I have seen in use were permanent triangular indentations that were formed into the concrete just before the night house doorway. You couldn't enter the building without stepping into it, yet it could easily be hosed out during the daily cleaning, refilled with water, and the chemicals added.

When working with non-human primates it is common in my experience for staff members to be required to wear a mask, gloves, boots, and on occasion, coveralls as well during daily husbandry activities. This leads to another point. If you have a potentially sick animal of any species and you suspect that the condition may be communicable then, as a precaution, it doesn't hurt to take these actions from a preventative standpoint. Conversely, avoidance or extra care is dictated for pregnant staff members when a threat of toxoplasmosis may be present. (*Editor's note: See the article on Zoonotic Disease Concerns for the Pregnant Zookeeper in April 2004 AKE pgs 160-164*) Each bacterial or viral hazard will be different, but there are some general precautions that can be taken on a daily basis by wildlife and zoological professionals.

Precautionary Measures

- If you are working in an animal work area, you need to report to work daily in a clean and laundered Zoo uniform appropriate for the weather conditions.
- While at work footbaths should be stationed at all animal areas and maintained at all times.
- Staff members actively working with infected populations may be required to wear coveralls on a daily basis while servicing exhibits. They should be washed daily on-site and left at the facility
- Staff members should wash their hands before and after drinking, eating, smoking, and using the restroom. Do not share food, water, or tobacco products at any time. Also, especially avoid hand contact with your eyes, nose, and mouth while gloved.
- Clean and disinfect your exhibit tools and service vehicle at the end of every workday.
- When you are preparing to leave the Zoo, change into a different set of shoes and leave your work shoes behind in your area before leaving work for the day. Spray your work shoes with a disinfectant before leaving your work area for the day.
- I recommend that you travel directly home, shower, and change into fresh clothes before running any personal errands. Wash your uniform as soon as possible to prevent potential cross-contamination.

Conclusion

In all honesty it's impossible for me to address every possible zoonotic consideration in a two or three-page column. However, there are scientific papers that have been done on this topic, some of which have appeared in the *AKE* and others that appeared in Resources for Crisis Management,

Volume I (1999). With the current threat of HPAI H5N1 ("bird flu") being a topic of concern these days, there is a wealth of information available through the Internet and I would recommend the following websites:

<http://www.fws.gov/home/avianflu>

<http://www.pandemicflu.gov/>

<http://www.foodsafety.gov/~dms/avfluqa.html>

http://www.fao.org/ag/againfo/subjects/en/health/diseases-cards/avian_HPAIrisk.html

<http://www.scwds.org/>

Next Month: We are considering using pepper spray at our facility, do you have any suggestions?

If you would like to submit a question for this column or have comments on previously published materials, please send them to AAZK, Inc., 3601 S.W. 29th St., Suite 133, Topeka, KS 66614 Attn: Reactions/AKF

(About the Author: Since 1985 Bill has been active in the fields of science, zoology, and wildlife management. His education and experience include a B.S. in wildlife management and post-graduate studies in zoology, Lab and Museum Assistant, Shoot Team Leader, ERT Member, Large Mammal Keeper, Senior Keeper, and Zoo Curator at various zoological facilities. His area of research is crisis management in zoological institutions, which draws upon practical experience and training as a Rescue Diver, Hunter Safety Instructor, NRA Firearms Instructor, and Red Cross CPR/First Aid Instructor. Away from work he operates Panthera Research, which is a research and consulting firm.)

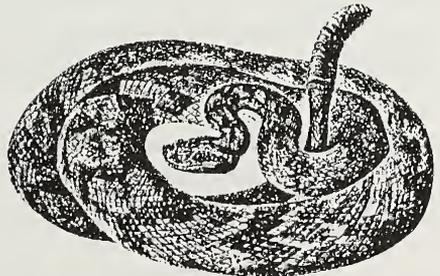
Complete North American Venomous Snake Image Set Available Online

The Center for North American Herpetology is pleased to announce that color images of all species and formally recognized pattern-classes of venomous snakes found in Canada and the United States are now online at the CNAH web site. The site has 55 images of the Family Crotalidae (Copperhead, Cottonmouth, Rattlesnakes, Pigmy Rattlesnake, and Massasauga), 7 images of the Family Elapidae (Eastern Coral Snake, Texas Coral Snake), and 2 images of the Family Hydrophiidae (Yellowbelly Sea Snake), a total of 64 color renditions made available for viewing gratis by CNAH. Most of the images are the work of noted wildlife photographer, Suzanne L. Collins, with individual contributions by Mike Cardwell, Dan Garlick, Corson Hirschfeld, and Michael Rochford.

The venomous snake images can be viewed at:

<http://www.cnah.org/nameslist.asp?id=6>

Simply scroll down to the Family name and select the image you wish to view.

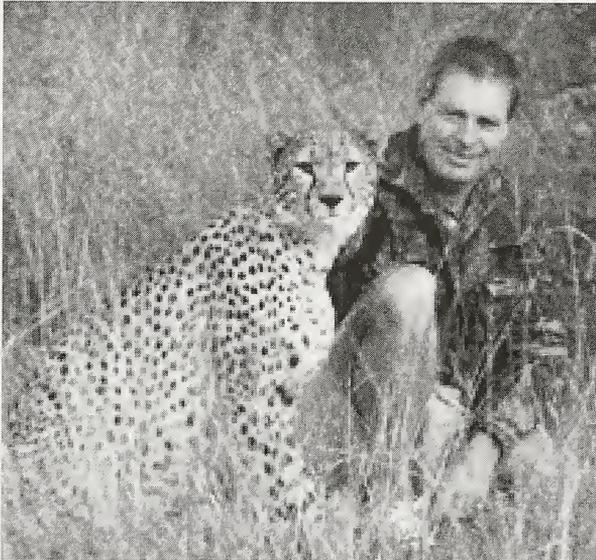


Letter from Ian Craig
Executive Director Lewa Wildlife Conservancy

“The Africa that for centuries has appealed to men and women seeking adventure and new horizons once needed no care. It was big enough to look after itself. Today, however, the grasslands with room for huge herds of migrating animals living alongside nomadic pastoralists, free to move as rainfall and conditions dictated, have gone. The world has moved on. The needs and aspirations of man have altered the face of the continent forever and the impact of his activities accelerates by the day.

For some today’s changing world looms as a terminal disaster while for those willing to embrace it, it has presented a golden opportunity with a small window of time that must not be lost.

In a small arid part of Northern Kenya a friendship based on the latter is developing, fostering mutual respect and trust amongst the men and women who clearly see this opportunity. Our forefathers



enjoyed, but probably did not appreciate the pureness of their environment. The elders amongst this friendship have lived through the most dramatic transition that their environment has ever encountered and have witnessed the corresponding loss of wildlife and habitat. They have also suffered a cycle of droughts and famine resulting in dependence on government handouts of food just to keep some families alive.

We at Lewa have put in place a plan with a clear goal to conserve wildlife while living with the reality of the 21st

century. By accepting the commercial needs and pressures of our civilization and acknowledging those of our wildlife, we will protect this integral part of Africa’s life and soul, which once lost, will be gone forever. Animals need space and this space is reliant on our goodwill. At Lewa this goodwill is deeply rooted in a friendship that is now on a roll: protecting wildlife, educating people, working with governments and changing people’s attitudes to development.

We invite you to join our friendship - to work with a dedicated group of people from different backgrounds and cultures, to improve their lives from within and to give their children a future, whilst at the same time ensuring that Africa’s wildlife has a home and a voice.”

Ian Craig

Upcoming Workshops of Interest

Training and Enrichment Workshop for Zoo and Aquarium Animals - 10-13 July 2007

Presented by Active Environments Hosted by Moody Gardens Rainforest and Aquarium, Galveston, TX. Instructors: Gail Laule, Margaret Whittaker, Val Hare

Active Environments is proud to present the first Training and Enrichment Workshop hosted by Moody Gardens. This unique four-day workshop will present an array of topics relating to behavioral management with particular emphasis on positive reinforcement training techniques (PRT) and environmental enrichment (EE). The workshop is designed for keepers, aquarists, managers, supervisors, curators, and veterinarians working with a wide array of animals held in zoos and aquariums. This workshop emphasizes the behavioral management approach to caring for captive animals, with focus on environmental enrichment, positive reinforcement training, and the problem-solving process. Workshop format includes lecture, discussion, small group projects, demonstrations, and multiple hands-on training and enrichment opportunities with Moody Gardens' diverse collection. Skills taught are directly related to enhancing staff's ability to manage captive animal behavior, improve animal welfare, and enhance the overall care and management of captive animals. The Workshop format is designed to maximize the value for each participant and as much as possible to address specific situations, needs, problems, and objectives. Be prepared to interact, share, and participate to make the experience as useful and relevant to you as possible.

The registration fee of \$850.00 includes the following: 5 nights stay in the Moody Gardens Resort Hotel; all workshop materials, including a copy of Don't Shoot the Dog; all meals and snacks during the workshop; Closing banquet; Transportation to and from local attractions; and Commemorative Workshop tote bag. We have reserved a block of rooms at the Moody Gardens Hotel based on double occupancy. For further information contact: Active Environments, Inc., 7651 Santos Road Lompoc, CA 93436; Tel: 805-737-3700; E-mail: info@activeenvironments.org Or contact: Diane Olsen (Moody Gardens): dolsen@moodygardens.com or Margaret Whittaker (Active Environments): indu22@earthlink.net Tel: 805-737-3700; Fax: 805-737-3705; E-mail: info@activeenvironments.org

The Old World Monkey Behavioral Management Workshop - 20-23 August 2007 (half day on 23rd); Hosted by the Saint Louis Zoo, St. Louis, MO. Presented by the AZA's Old World Monkey Taxon Advisory Group

The Old World Monkey Taxon Advisory Group is planning a unique 3.5 day workshop that will present a wide array of topics relating to the behavior and management of Old World Monkeys (OWMs) with particular emphasis on techniques that enhance social housing opportunities. It is designed for those who care for and manage Old World Monkeys, including, curators, supervisors, keepers, and veterinarians. This workshop will be a comprehensive examination of the behavioral management approach to caring for captive primates with emphasis on positive reinforcement training, Old World Monkey behavior, and the use of psychotropic drug therapy, hormonal treatments, and Chinese veterinary medicine to manage behavior, address behavioral problems, and reduce risks associated with social housing and introductions of OWMs. Workshop format will include lecture, discussion, small group projects, and demonstrations. Skills taught are directly related to enhancing socialization and reducing the associated risks, and improving the overall ability to maintain more appropriate social groupings of OWMs. Instructors: OWMTAG Working Group Members; Dr. Signe Beebe, Acupuncture and Alternative Therapy Specialist; Dr. Cheri Asa, Contraception and Hormonal Therapy Specialist; Margaret Whittaker, Operant Conditioning/ Behavioral Management Specialist; and a Veterinary Behaviorist.

Registration Fee of \$575 per person includes all meals and snacks, workshop notebook and all materials, hotel - double occupancy 4 nights, tote bag. For information, contact Colleen McCann, OWM TAG Chair cmccann@wcs.org or Margaret Whittaker, OWMTAG Behavioral Management and Training advisor indu22@earthlink.net.

Please note the Old World Monkey TAG meeting will take place immediately following the workshop on August 23-24, 2007.

Gravity and Hydrotherapy Procedures as a Way to Reduce the Possibility of Stiffening Joints in Elephants After an Accident

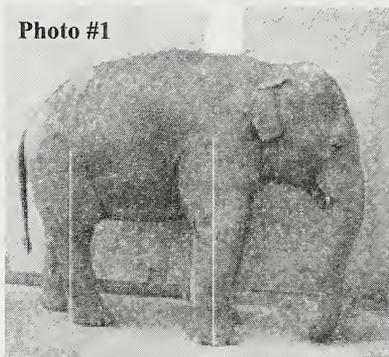
By Alan Roocroft
Ramona, CA
August 2006

With a section by Gina Nichols, Elephant Manager, Santa Barbara Zoo, Santa Barbara, CA

Elephants are not too prone to accidents in our zoos although on occasions it has happened, particularly under historic circumstances, in old-style facilities where moats were common and elephants have either fallen or been pushed in. Zoo elephants are generally out of condition, so muscle pulls can also happen. The size of an elephant's body demands that for long periods of time they must have all four legs under its weight. Structurally speaking, an elephant's leg is like the legs of a table. To carry the weight, all four legs must be 90 degrees under the weight (see Photo #1). Now, take one

leg off the table or incapacitate one leg of the elephant, the elephant will deteriorate and likewise the table falls over. To highlight how sensitive an elephant's stance and gait can be, I'll use the following example. Chaining elephants over night, which we did on a regular basis in the past, exposed elephants to many abnormalities in their physical and behavioral development. The next generation of captive- born elephants will be our true test as animal managers. If they are still rocking in anticipation or boredom, banging their heads against walls, waiting at doors to be let inside, and pulling their mammary glands, we failed.

Photo #1



One elephant I remember quite well arrived from an Asian zoo to a zoo in the west. The culture from which the elephant arrived had a long history of tethering elephants, mostly because the mahouts the zoo hired had a very strong philosophy concerning elephant handling, and tethering was routine when the elephants was not working. The elephant arrived in the west with a compromised front leg that appeared to be longer than the other one. As a youngster at the zoo, the elephant was chained for very long periods, a practice the culture condoned without question, but please remember not out of malice. The elephant had developed, not surprising, a stereotypical behavior because of the way and length of time it was tied. The elephant, I understand, would rock back and forth pulling on the leg that was tied, which is always the same leg in the culture of the mahouts. The leg, over time, stretched and became longer, unnoticed by the caretakers. Even the zoo management didn't notice. Unfortunately the leg became chronic and the elephant developed a life-threatening compromised leg.



Photo #2

Photo # 2 shows a healthy elephant leg. See the relaxed bend in the joints and how the elephant places the foot flat on the tub. This is a very good guide when evaluating a compromised elephant leg.

It has been my experience, and I wanted to share with you, that you can help elephants mend after non-major accidents to the legs, wrists and knees.

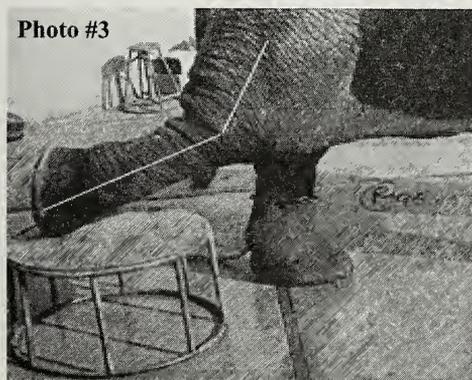
Naturally your Veterinary Officer must be contacted when such accidents happen; such as an elephant slipping or being hurt during a confrontation with another elephant. Pulling muscles in zoo elephants can be easy because they are generally out of shape and overweight. An elephant's first response when it hurts its leg is to stiffen the joint to protect it and distribute its body weight evenly. Depending on the severity of the accident, an elephant will limp around for months not wanting to bend the leg. I have even witnessed elephants, after a long period of limping, forgetting that the leg is supposed to be hurting and in a fit of excitement run bending the leg normally. Then as if to say "wait a minute my leg is hurting", stiffen it up again. This is proof to me that they will keep a leg stiff long after the pain goes away. I believe it then becomes a habit they can't kick, and in time the tendons shrink and after a long while they cannot bend the leg anymore. This is why it is important to me that I bend the leg right after the accident, and this can be done in Free or Protected Contact elephant handling. I call this procedure "Gravity Therapy" only because it is gravity that finally makes the leg bend. The hydro-portion of the procedure relaxes the muscles and tendons so the weight of the leg when relaxed, bends. This can be done with a rear leg or a front leg. Elephants will stiffen both front and rear legs in an effort to stabilize and control their weight.

There are a number of topical solutions that can be used, but before using anything please consult your vet department. "Spirit of Camphor" is one that I have used in a liniment form on the legs of elephant. Solutions can be found that are used on horses, but for elephants they must be used in greater quantities. DMSO solution has been used when elephants are stiff in their joints with some success. If the leg is really sore, painkillers can be used to override the initial pain that might stop the elephant wanting to lift its leg for the therapy. This again should be in the hands of a vet and their team, which drugs for how long etc, is a professional decision.

I would like to share with you four cases of stiffening in the joints and the therapy that was offered to help and cure the elephants concerned.

Case 1. Peaches a female African elephant housed at the (SWAP) San Diego Wild Animal Park, Escondido, California, USA.

Peaches had been knocked into the moat in the outside yard. Fortunately, the moats at the time had a gradual slope on the elephant side so her fall was more of a slide and greater damage was avoided.

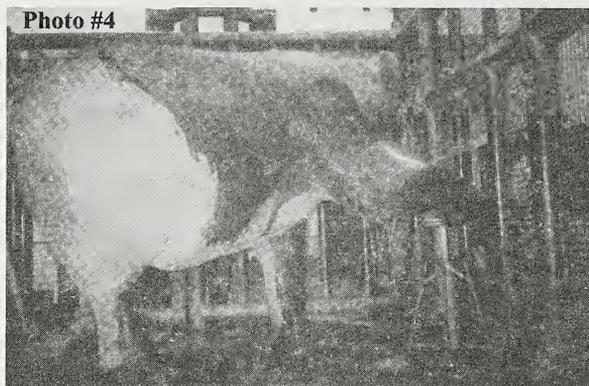


Peaches was not an agile animal, her build was rather round on all corners, but big to boot. She struck an impressive pose, even more so when you stood next to her. After getting out of the moat, which was a procedure in itself, she started to limp on her left rear leg. Pretty soon she held the leg completely stiff, swinging it as she walked. This to me is the danger zone for elephants that have hurt their leg joints. Over time the tendons shorten and the leg seems to lock in the stiff position and something should be done right away. Usually it is only pain relief and no more because the consequences are not as apparent to everyone, it's

only after you have seen a number of cases that you can start to connect the dots and the picture starts to mature. (see Photo #3)

Case 2. Cookie a female Asian elephant also housed at the (SWAP) San Diego Wild Animal Park, Escondido, California, USA.

Cookie, an overweight elephant, was earlier in her career a ride elephant at the SWAP and spent a lot of time walking. When elephant rides came into question, they were discontinued. From standing much of the time on concrete floors (particularly at night), many zoo elephants become out of condition and loose muscle tone. Cookie was in Protected Contact when the therapy was performed



on her. Her years in Free Contact and the cues and commands she already knew helped with the procedure. We never did know what had happened to Cookie. Some thought she had slipped, but there was also a good chance it could have been the onset of gout from the very high quality diet she was receiving and all the treats she would get as part of the PC training system that was being implemented. Even arthritis was mentioned as a possible cause. We did develop a

special piece of apparatus that allowed her leg to be elevated in increments (see Photo #4). Lifting her leg gradually higher till it was at a 90-degree angle, the apparatus we designed and used could be higher and lowered depending upon the stage the animal was at in the therapy. Cookie eventually walked normally after a few weeks of the therapy.

Case 3. Hatari, a female African elephant at the (SWAP) San Diego Wild Animal Park, Escondido, California, USA.

Hatari, for those who did not know, was one of the little elephants in the film that bears her name; she played along side the "Duke", John Wayne. Hatari had for as long as I knew her always had a compromised front left wrist, so any other issue with her legs would have hit her very hard and disabled her even further. The story behind Hatari's front right leg problem grew out of a mistake and a misunderstanding of the elephant management team at the time. Too many non-cooks professing to be cooks in the kitchen. She was restrained in the yard during reconstruction of the barn and the male was released out of his house before she was taken off restraints. Consequently she pulled her leg rather hard trying to get away from the male, not knowing there was a fence between them. She started to limp almost immediately I understand, so therapy was suggested and the keepers started right away. Because the leg was very stiff she was started on a flat bale of hay, (see Photo #5). After the initial therapy the bale was turned on its end (see Photo #6). Eventually, she was graduated up to an elephant foot work tub, (see Photo #7) where over time she regained some of the motion of the leg. I have drawn lines on the photos along the leg so you can see what the initial bending ratio was and how it improved as the treatment advanced. In Photo 7, with the leg higher on the tub, you can clearly see the potential of Gravity Therapy as the knee joint bending ratio increases. The leg will gradually start to relax and bend through its own weight, stretching the tendons and muscles. Add warm water, pain relief medication and (Spirit of Camphor) to the stretching, then you have a very strong chance of salvaging the leg and joint. The use of a strong fire hose jet and pressure washers on the leg can also be important to induce blood flow, particularly if you have warm water available. The fire hose can also act like a deep muscle massage and I imagine it should feel good also. If, of course, the leg is not severely damaged, this therapy will give the elephant confidence to bend the leg and eventually walk normally again.

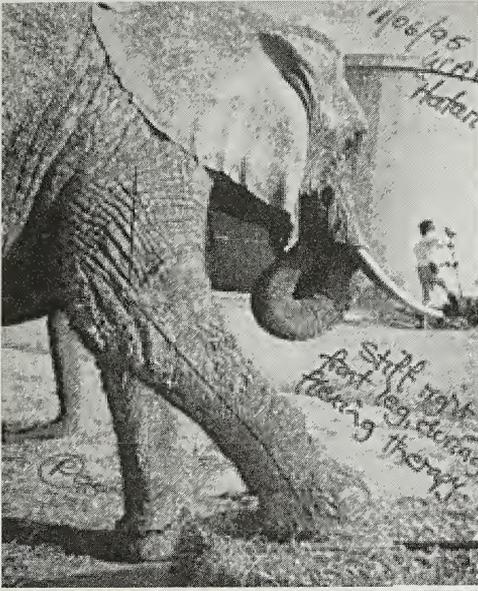


Photo #5



Photo #6

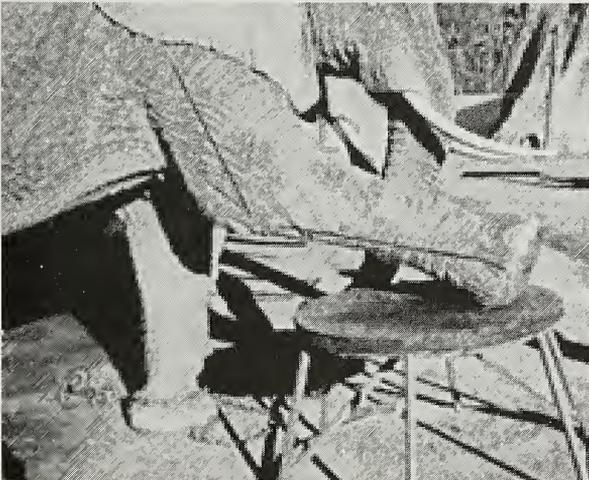
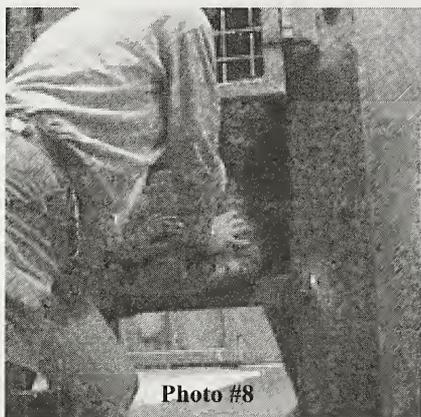


Photo #7

Case 4: Suzie a female Asian elephant housed at the San Barbara Zoo in California.

Suzie has had previous history with stiffness and injury on her LF leg. We had previously treated her w/ibuprofen when she had bouts of stiffness on her wrist. When she received the damage from her recent accident in the yard, her whole leg swung out sideways when she walked and she had no flexion in her wrist. We started hot water hydrotherapy (round rotations for a period of time over the affected areas-and the other areas/joints that she was applying more pressure to/due to her injury) and worked her through targeting her leg up on the foot bar. She first had to step back and swing her leg up awkwardly. With several repetitions of this she started to place it up with slight flexion. At that point I started to apply pressure to the front of the foot and originally had my right hand slightly



back to place pressure behind the wrist joint area and left hand up a few inches above the #3 nail (see Photo #8). While apply pressure to both areas she flexed her foot in better position. With multiple repetitions she eventually moved more fluently (after the first couple of days, pressure was only applied to the front of the foot). We then applied hot/warm water therapy to the same area and applied DMSO to the affected area. She moved better throughout the day after each session. Within a few days she was able to get a 90-degree bend during therapy and had a significant difference from her walk into the barn/and leaving after the session. It only took a couple of weeks to get her back to a near normal gait. We did increase her ibuprofen during this time and reduced it according to her movement. She re-injured

herself and by doing the same therapy routine she was back to normal in a couple of days. It's been a couple of months and she has not had any other problems with her joint area. To allow easier resting access, extra sand was placed in the yard following the first injury. She continued to lie down at night. Initially her time lying down was greatly decreased, but throughout the process we noticed it became easier for her to lie down, and she lay down for longer periods of time. Initially she laid down only on one side, but she was able to lay down on both sides after the whole process was completed.

Benefits of the Therapy

Before any of these treatments or suggestion is implemented, please contact your Veterinary Department or consulting Zoo Veterinarian.

The benefits of the application of this therapy will be obviou. If an elephant that was limping or dragging a leg from a minor injury or joint strain starts to walk normally and can put normal weight back on the leg, then it is working. Other benefits where I see are in the cases of, and at the possible on-set of, arthritis, particularly in the wrist and knee joints.

As we all know from human medicine, movement is of great benefit and helps manage arthritis. Arthritis, as we also know, was and still is a huge problem in older captive elephants.

A side note: Zoos that perform regular exercise with their elephants are probably ahead of the game. Elephants that walk and climb over different terrain, have access to varying topography, either in their exhibit or on their daily walk, swim on a regular basis, - you get the point, are generally more active and I believe, are less likely to develop joint issues unless from injury.

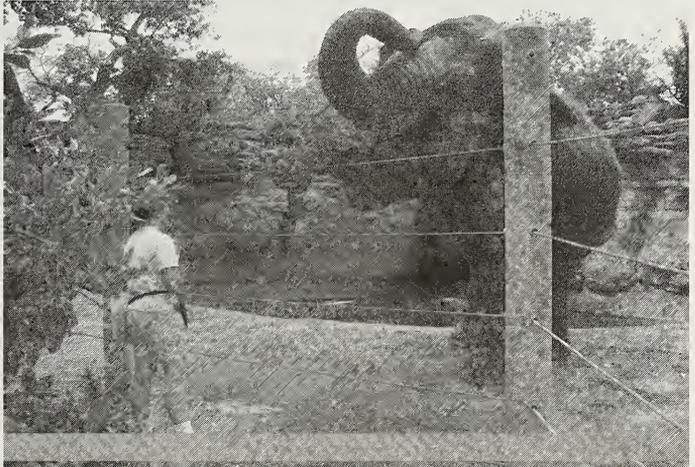
Therapy will not help in cases of confirmed abnormalities and deformation to legs and knee joints that can occur through the lack of exercise, or when an elephant is carrying excessive weight. In older elephants I have seen the shifting of the joint's center of gravity and the promotion of an abnormal gait from what appears to be bone deterioration. In my opinion at that point it is too late

to introduce health enhancements, even medication does not help in extreme cases. Strong painkillers will help ease the discomfort, but the dye has been cast for those animals.

There are two zoos I would like to point out that in their normal daily routines offer their elephants routine cardiovascular exercise and challenges on their daily walks.

Albuquerque Biological Park exercises their elephants in protected contact with a series of leg lifting behaviors front and rear and is documenting many muscle toning benefits from the exercise sequences (see Photo #9)

Photo #9



The Jerusalem Zoo in Israel takes their elephants on forging trip in and on the outskirts of the zoo. Moving over at times very hilly terrain, I watched the young elephant born at the zoo climb over obstacles that I had difficulty negotiating myself. (see Photo #10)



Photo #10

Acknowledgements

Special thanks to Gina Nichols Elephant Manager, Santa Barbara Zoo, California, USA for her contribution to this article.

Conservation/Legislative Update

Column Coordinators: *Becky Rickendollar, North Carolina Zoo*
and *Greg McKinney, Philadelphia PA*



Correction: *The March 2007 Conservation/Legislative Update was put together by both Becky and Greg as they began their co-coordinatorship of the section of AKE. Beginning this month, they will alternate column responsibilities each month. This month's selection of items is from Becky.*

Zoos Unite to Save Amphibians

The world's amphibians are being threatened by the deadly chytrid fungus, which infects skin. To combat this problem, scientists from around the world met in Atlanta to organize the Amphibian Ark Initiative, a collaboration between the Association of Zoos and Aquariums, the World Association of Zoos and Aquariums, and the Conservation Breeding Specialist Group. This initiative calls on zoos, aquaria, and botanical gardens throughout the world to take in threatened amphibians until the fungus can be stopped.

The fungus is believed to affect skin functions such as water and gas exchange. Amphibians infected with the fungus die of dehydration. The fungus probably started in Africa with the clawed frog (*Xenopus laevis*) which is immune to the fungus but can carry it on its skin.

According to the Conservation Breeding Specialist Group, 43% of the world's amphibians are in decline and 32% are threatened. Since 1980, more than 120 species have gone extinct. Members of the Amphibian Ark Initiative have compared this level of mass extinction to the plight of the dinosaurs. Zoos from around the world have already begun to step up and offer their assistance in creating amphibian facilities and breeding centers. *Source: The Columbus Dispatch, February 16, 2007*

Virgin Birth at Chester Zoo

Five Komodo dragons (*Varanus komodoensis*) were born in January at Chester Zoo in northern England, further evidence that this endangered species can reproduce in captivity. The eight-year-old mother surprised staff when she became pregnant without having ever met a dragon of the opposite sex. "Flora is oblivious to the excitement she has caused but we are delighted to say she is now a mum and dad," said Kevin Buley, the zoo's curator of lower vertebrates and invertebrates.



photo from stock xchange.com

Scientists have long known about parthenogenesis, a process often used by reptile species, where eggs become embryos without male fertilization. However, Flora's "miracle" birth is one of the first instances of parthenogenesis being documented in a Komodo dragon. The world's largest lizards, there are fewer than 4,000 Komodo dragons left in the wild. This makes this evolutionary wonder even more exciting as zoologists consider the implications parthenogenesis may have on the dwindling Komodo population. *Source: The Associated Press, January 25, 2007*

Contraception to Curb Wildlife

Wildlife officials in Iowa are exploring the option of using contraception to address the state's white tailed deer (*Odocoileus virginianus*) overpopulation problem. The birth control vaccine would neutralize sex hormones and result in infertility in both males and females.



USFW: K.A. King Photographer

The contraceptive vaccine, GonaCon[®], is being developed by a branch of the U.S. Department of Agriculture. It is slated to be submitted to the Environmental Protection Agency but may not be approved until early 2008. GonaCon will be the first wildlife contraceptive available for non-research purposes. Current contraception methods are impractical because they involve singling out females for an injection and then re-injecting those same females again at a later date. The Iowa State Legislature is beginning to explore a bill that will regulate the use of wildlife contraceptives. *Source: The Associated Press, February 6, 2007*

Cruise Line Pays for Whale Death

In July 2001, a pregnant humpback whale (*Megaptera novaeangliae*) was found dead due to massive skull fractures near Glacier Bay National Park. The injuries to “Snow”, an animal that had been tracked by researchers since 1975, were consistent with being struck by a ship. Now, Princess Cruise Lines will pay for their alleged part in the fatal mistake.

While not admitting responsibility for the whale’s death, the company pled guilty to failing to operate the cruise ship at a slow, safe speed while near two whales on July 12, 2001. Four days later Snow was found dead where the cruise ship had earlier been traveling. The cruise line paid a maximum \$200,000 fine plus \$550,000 in restitution to the National Park Foundation, with the money specifically intended for conservation efforts at Glacier Bay National Park. In addition, Princess has now created guidelines and speed restrictions for ships to follow when whales are near. *Source: The Associated Press, January 30, 2007*

Chimpanzees Build Weapons

West African chimpanzees (*Pan troglodytes*) have been observed making spears from sticks which are then used to hunt small mammals. This is the first evidence that animals other than humans build weapons.

Researchers in Senegal documented the process by which the chimpanzees make the spears, which takes several steps. With hands and teeth, the animals were repeatedly seen taking branches off of long, straight sticks. They then peeled the bark off of the stick and sharpened one end with their teeth. Then they jabbed the sharpened end into the hollow parts of tree branches where bush babies (*Galago senegalensis*) sleep during the day. As reported in the journal *Current Biology*, in one instance the chimpanzee took the injured animal out of the tree and ate it. That chimpanzees use tools has long been common knowledge in the scientific community.



Male chimp eats a bush-baby killed with a spear fashioned by the ape. *Photo Newsonline.com*

Interestingly, two-thirds of the documented cases of spear-making involved female chimpanzees. This supports the hotly debated position that females are the creative problem-solvers among primate societies. However, the tools documented up to this point were simple and used to extract food, rather than to kill it.

This discovery that some chimps use wood to make weapons helps to support the idea that early humans did, too. *Source: Washington Post, February 23, 2007*

Rhino on a Mission

Andalas, a five-year-old Sumatran rhino, (*Dicerorhinus sumatrensis*) was the first of his kind to be born in captivity since 1889. Now he is on an important mission, to travel to Indonesia and help save his species from extinction. Andalas has made the long journey from the Cincinnati Zoo &

Botanical Garden where he was born to a rhino sanctuary on the island of Sumatra, where females Rosa and Ratu are waiting.

The Sumatran rhino is the most threatened of the five rhino species, with less than 300 remaining in the wild. Breeding programs such as the one that is returning Andalas to his species' home will help this periled population. Dr. Terri Roth, Cincinnati Zoo's Vice President of Conservation, Science, and Living Collections expressed the difficulty in letting this precious animal go. However, he says, "we want nothing more than to help save this species from extinction, and if that means giving up our first-born calf, then we will rejoice in the opportunity." *Source: Associated Press, February 20, 2007*

Endangered Species Incentives

Bipartisan legislation unveiled early last month would give incentives to landowners who opt to protect endangered species. The legislation is expected to pass through the committee level and has won the support of the American Farm Bureau and Environmental Defense, organizations usually on opposite sides of the endangered species debate.

The bill would not change the Endangered Species Act itself but instead would offer tax credits to farmers and ranchers who spend money to recover endangered species. Management and recovery plans would have to be included in each case.

"It does what ESA does not, it creates incentives," said Sen. Mike Crapo (R-Idaho), one of the authors of the legislation. *Source: E&E News, March 1, 2007*

Rubber Reef a Bad Idea

Two million old tires lay at the bottom of the ocean one mile off the coast of Ft. Lauderdale, FL. The tires represent an environmental experiment gone awry. In 1972 the tires were put in the bottom of the ocean, creating an "artificial reef" to attract sea life and help ease overburdened landfills. However, very little marine life has begun to call the "reef" home. And many of the tires have broken loose and are washing up on shore. Even more have gotten stuck against a natural reef, blocking coral growth and harming sea life.

"The really good idea was to provide habitat for marine critters so we could double or triple marine life in the area. It just didn't work that way," said Ray McAllister, a professor of ocean engineering at Florida Atlantic University who organized the project. "I look back now and see it was a bad idea."

A proposed clean-up would use Army and Navy divers working as a training exercise. The complete recovery project is expected to last through 2010 and cost the state about \$3.4 million.

"We've literally dumped millions of tires in our oceans," said Jack Sobel, an Ocean Conservancy scientist. "I believe that people who were behind the artificial tire reef promotions actually were well-intentioned and thought they were doing the right thing. In hindsight, we now realize that we made a mistake."

No one can say with certainty why the idea doesn't work, but one problem is that, unlike large ships that have been sunk for reefs, tires are too light. They can be swept away by the tides and powerful storms before marine life has a chance to attach. Some scientists also believe the rubber leaches toxins. *Source: Associated Press, February 19, 2007*

Canned Hunting Under Fire in South Africa

South Africa's environment minister, Marthinus Van Schalkwyk, has declared war on canned hunting, the hunting of big predators and other wildlife contained in small enclosures with no way to escape. His action has angered the hunting industry, which is threatening legal action.

Van Schalkwyk's plan has several components, including a rule that would require captive born lions to live in the wild for at least two years before they can be hunted. An earlier proposal required a six-month wait, which would not give the animals enough time to develop a fear of humans.



USFW: Ken Stansel Photographer

The new law, which goes into effect June 1, would also forbid the hunting of tranquilized animals. It also outlaws the use of vehicles to chase the animal until it is unable to run any further.

“To see people who are half drunk on the back of a bakkie (truck) hunting lions which are in fact tame animals is quite abhorrent,” Van Schalkwyk — himself an avid hunter — told The Associated Press.

Up to 7,000 foreign tourists visit South Africa each year on hunting safaris, each spending roughly \$18,000. About 55%

of hunters are from North America and the rest from Europe and other countries. *Source: Associated Press February 21, 2007*

Africa Sees the Return of Elephant Poaching

The growing trade in ivory is fuelling an alarming rise in elephant poaching which could undermine attempts to save the world’s biggest land animal from extinction, according to a recently published study. Scientists believe that poaching of African elephants (*Loxodonta africana*) has returned to a scale not seen in decades and that the number of animals being killed could cause some regional populations to become extinct.

They believe that elephants across vast areas of Africa are once again endangered despite the significant increase in numbers recorded by the small number of countries with good conservation records. The study was carried out by scientists who have pioneered a new DNA technique of tracing the geographic origins of elephant ivory. They found that intensive poaching can and does occur over a relatively small area of land.

Dr. Samuel Wasser of the University of Washington in Seattle and his colleagues have built up a map of elephant DNA based on dung samples taken from different regions of Africa. They have also pioneered a method of extracting DNA from elephant ivory and have used it to analyse samples seized in police raids across the world. They used the methods to determine the geographic origins of the biggest ivory seizure since the 1989 ban - a consignment of more than 6.5 tons packed into a 20ft container shipped from Malawi to Singapore via South Africa. The consignment included 532 tusks and 42,120 smaller pieces of solid ivory that had been shaped into Japanese “hankos”, blank signature stamps used to sign works of art and other valuable paperwork.

Police worked out that the ivory had been carried from Zambia to Malawi in small lots before it was shipped, but they did not know where in Africa the tusks had originated - whether from one location or across several. Dr. Wasser’s team determined that the entire consignment had been butchered from savannah elephants living in a narrow east-west band of southern Africa, centred on Zambia. Some of the tusks in the consignment weighed up to 11kg, which is more than twice the weight normally seen on the black market, indicating that they came from a large number of older animals.

Just before the consignment was seized, Zambia had petitioned for permission to sell its ivory stockpiles, which were supposed to have dated from before the 1989 trade ban. But the application said that only 135 elephants were known to have been killed in Zambia in the previous 10 years, which is far fewer than the number that would have been slaughtered to make up the single, illegal consignment seized in 2002, Dr. Wasser said.

The growth of Asian economies, particularly the Chinese, has been a major factor boosting the ivory trade, with prices rising from \$100 a kilogram in 1989 to \$750 in 2004, Dr. Wasser said. Between August 2005 and August 2006, police and customs seized 12 major consignments of ivory destined for the Far East, weighing nearly 24 tons. The scientists warn that the illegal trade has escalated to the “devastating levels” that occurred before the 1989 ban on the sale of ivory imposed by the Convention on International Trade in Endangered Species. *Source: The Independent News and Media Ltd. 3/6/07*

Chapter News Notes

Milwaukee AAZK Chapter

Here is a summary of the fund raising efforts by AAZK for 2006

Animals Asia Foundation received \$472.00 and the Bongo Species Survival Program received \$885.00 early in the year. The funds came from late 2005 events. Additionally, \$350.00 of the funds raised from the Valentines Day bake sale went to the Audobon Zoo for bird enrichment. In June, we decided to donate \$300.00 to the Timber Wolf Alliance.

The Bowling for Rhinos event raised \$1792.00 for our annual contribution. The Animals Asia Foundation received another donation of \$1800.00 from our November Silent Auction event. Finally, \$300.00 went to the Humboldt Penguin Project from our caramel apple sales.



Also, we have new officers for 2007. They are:

President.....Dawn Kruger
Vice President.....Mike Frayer
Secretary.....Stacy Whitaker
Treasurer.....Joan Stasica
Liaison.....Earl Conteh-Morgan

This February, we had the pleasure of hosting Dr. Marc Ancerenaz from the Kinabatangan Orangutan Conservation Project who came and spoke at our zoo. Following the lecture, \$500 was donated to the organization.

---Earl Conteh-Morgan, Liaison

What's your Chapter been up to? Let us know about your successful fundraisers, guest speakers, conservation projects, new officers, new logos, etc. Do you have a new logo you want to show the membership? We want to hear from you! Send your Chapter News to the AKF Editor at: akfeditor@zk.kscsxmail.com

DNA 'bar-codes' Help Find New Species

Canadian researchers have co-authored a biodiversity study on DNA "bar-coding" they say will pave the way for cataloguing the world's organisms and lead to the discovery of untold numbers of new species.

With this technology, the study authors envision the creation of a hand-held device that will allow the average person, within minutes, to identify any species of plant or animal life and access biological information about it.

"When we're finished codifying bar codes and creating this reference library for life, any person on the planet will be able to identify any organism," said co-author Paul Hebert, director of the Biodiversity Institute of Ontario at the University of Guelph.

"Any person equipped with a bar-coder can walk through the forest and identify the life around them. Bar-coding is revealing legions of unrecognized species, and it's going to change the species count for the planet."

The study by the University of Guelph and New York's Rockefeller University — Birds, Bats and DNA Barcodes: Extensive New Studies Reveal Many 'Overlooked' Species— appeared in the journal *Molecular Ecology Notes*.

Researchers cataloguing birds across Canada and the United States through DNA bar-coding discovered 15 new genetically distinct species, with variations nearly indistinguishable to the human eye. Researchers also found six new species of bats in Guyana.

The aim of bar-coding is to isolate a small piece of DNA and have it represented as a distinct numerical sequence about 650 digits long — similar to bar codes on retail products — using only the numbers 1 through 4.

That may seem like an unwieldy length, but if an organism's entire DNA chain were to be represented that way, it would be about 3.5 billion digits. Source: ClipMarks / www.theglobeandmail.com

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